Department of Environmental Conservation
Response to Comments

For

Golden Valley Electric Association Healy Power Plant

APDES Permit No. AK0022942

Public Noticed January 20, 2017 - February 21, 2017

PROPOSED FINAL, 2017

Alaska Department of Environmental Conservation
Wastewater Discharge Authorization Program
555 Cordova Street
Anchorage, AK 99501

1 Introduction

1.1 Summary of Facility / Permit

The Golden Valley Electric Association (GVEA) Healy Power Plant is a coal-fired electric generating facility located along the east bank of the Nenana River near the confluence of Healy Creek, approximately 2.5 miles east-southeast of Healy. The power plant is comprised of two pulverized coal-fired steam generators, Unit 1, a 25 megawatt station, and Unit 2, a 54 megawatt station. Unit 1 has been in operation since 1967 and Unit 2, which began burning coal in 1998, has mostly been offline since then, but is expected to be operating again in the spring of 2017. Power plant intake water comes from the Nenana River via two intake structures that are located in constructed lagoons offset from the Nenana River and deep groundwater wells. Discharge of non-contact cooling water and low-volume treated nondomestic wastewater occurs through two outfalls to the Nenana River. Each outfall has a mixing zone for temperature and iron.

The previous Healy Power Plant wastewater discharge permit, issued by the Environmental Protection Agency in 2011, expired on July 31, 2016. Because a timely application was submitted by GVEA prior to the July 31, 2016 expiration date, DEC administratively extended the Healy Power Plant wastewater discharge permit on February 5, 2016 until such time as a new permit is issued.

1.2 Opportunities for Public Participation

The Alaska Department of Environmental Conservation (DEC or the Department) proposed to issue an Alaska Pollutant Discharge Elimination System (APDES) wastewater discharge permit for the Healy Power Plant. To ensure public, agency, and tribal notification and opportunities for participation, the Department:

- identified the permit on the annual Permit Issuance Plan posted online at: http://www.dec.state.ak.us/water/wwdp/index.htm
- notified potentially affected tribes and local government(s) that the Department would be working on this permit via letter, fax and/or email
- posted a preliminary draft of the permit on-line for a 10-day applicant review November 28, 2016 and notified tribes, local government(s) and other agencies
- formally published public notice of the draft permit on January 20, 2017 in the Fairbanks Daily News-Miner and posted the public notice on the Department's public notice web page
- posted the proposed final permit on-line for a 5-day applicant review on March 29, 2017
- sent email notifications via the APDES Program List Serve when the preliminary draft, draft, and proposed final permits were available for review

The Department received comments from three interested parties on the draft permit and supporting documents. The Department also requested comment from the Alaska Departments of Natural Resources, Fish and Game (ADF&G), the National Marine Fisheries Service, the U.S. Fish and Wildlife Service, and the Environmental Protection Agency.

This document summarizes the comments submitted and the justification for any action taken or not taken by DEC in response to the comments.

1.3 Final Permit

The final permit was adopted by the Department on pending. There were changes from the public noticed permit. Significant changes are identified in the response to comments and reflected in the final fact sheet for the permit.

2 General Support for the Permit

Comment Summary

The Alaska Mental Health Trust Land Office is in support of DEC issuing the Healy Power Plant permit. ADF&G supports the efforts of DEC and GVEA to meet the provisions of CWA Section 316(b) regarding protection of fish resources and offered their assistance in developing and implementing measures to achieve those provisions.

Response:

DEC appreciates the Alaska Mental Health Trust Land Office and ADF&G for their comments in support of the permit.

DEC did not make any changes to the permit or fact sheet based on this comment.

3 Fugitive Dust Control

Comment Summary

Permit Section 1.3.3

- GVEA requested the removal of Permit Section 1.3.3 stating that the water applied to stockpiles and roads will either infiltrate or be directed into surface impoundments at the facility.
- GVEA states that the weekly samples collected at Outfall 001A, upstream of the mixing box must meet the effluent limits in Table 2, therefore, water at the mixing box (downstream of Outfall 001A) will meet the effluent limits.

Response:

- Permit Section 1.3.3 states that the quantity and quality of water that is applied to ash stockpiles and manmade unpaved areas and roads must be submitted to DEC with the DMR for the month following application of the water.

- The extraction of water from the mixing box reduces the overall discharge to the outfalls. The outfalls each include authorized mixing zones that were modeled in part on the discharge flows. As such, DEC has determined it is therefore appropriate to know the amount of water that is removed from the wastestream to assess any impacts the removal may have on the mixing zones.
- Treated low–volume wastewater must meet the pH and oil and grease limits in Table 2 of the Permit prior to the mixing box.
- It is not DEC's intent to require redundant pH and oil and grease sampling. GVEA's regularly submitted DMRs will provide the necessary pH and oil and grease monitoring data.
- DEC is revising Permit Section 1.3.1 by adding clarification that the periodic use of non-contact cooling water and treated low-volume wastewater from the mixing box may be used on ash and coal stockpiles and manmade unpaved areas and roads to assist in fugitive dust control. DEC is concurrently removing Permit Section 1.3.2. The clarification that treated low-volume wastewater may be used for fugitive dust control in Permit Section 1.3.1 fulfills the intent of Permit Section 1.3.2.
- DEC has removed the requirement for GVEA to provide notice on the quality of the wastewater that is used for fugitive dust control as DEC can obtain this data from the discharge monitoring reports. DEC shall, however, require that GVEA maintain a log that includes the quantity of water removed from the mixing box and applied to ash and coal stockpiles and manmade areas and roads. The log shall be kept onsite and made available to DEC upon request. This modification is consistent with the original intent of Permit Section 1.3.3.

Permit Sections 1.3.1, 1.3.2 and 1.3.3 have been modified as indicated above. A Fugitive Dust Control discussion containing the above decision has been added to Fact Sheet Section 5.8.

4 CWA 316(b) Best Technology Available Interim Requirements

Comment Summary

Permit Section 2.1, Fact Sheet Section 9.1

- GVEA expressed concerns regarding using bubble curtains and fyke nets as an interim best technology available.
- GVEA states that the installation of bubble curtains and fyke nets will require extensive maintenance and management, considering the low number of fish that enter the lagoons annually
- GVEA states that the installation and maintenance of fyke nets would require a fish handling permit.
- GVEA proposes that the point of compliance to meet CWA Section 316(b) requirements be established at the mouth of the intake lagoon and not at the intake screen based on the definition of a cooling water intake structure under 40 CFR Parts 122 and 125.

- ADF&G does not support the use of fyke nets.

Response:

- DEC followed up with ADF&G regarding their opposition to the use of fyke nets. ADF&G stated that fyke nets are not intended for long-term installation and that the maintenance of the nets would be labor intensive. They also indicated that more effective bubble curtains could be employed than what had been used during prior studies.
- Based on ADF&G and GVEA concerns, DEC has removed the fyke net installation and maintenance requirement at Permit Section 2.1. The bubble curtain installation and maintenance requirement will remain in the permit. A modification to Permit Section 2.1.2.1 requires GVEA to use other applicable technology with the bubble curtains that minimizes impingement and entrainment. The permittee must obtain written approval from DEC prior to using another applicable technology.
- The purpose of CWA Section 316(b) is to reduce impingement and entrainment of fish and other aquatic organisms at cooling water intake structures.
- CWA Section 316(b) requirements apply to the location, construction, and capacity of the cooling water intake structures and provide requirements that reflect best available technology (BAT) for minimizing environmental impact.
- EPA defines a cooling water intake structure in the preamble to 40 CFR 122 and 125 as the total physical structure and any associated constructed waterways used to withdraw waters of the United States (U.S.). As such the cooling water intake structure extends from the point at which water is first withdrawn from the Nenana River up to, and including the intake pumps.
- Compliance with 316(b) is independent of where water is first withdrawn from waters of the U.S.
- Compliance with 316(b) may be achieved through the use of a single or combination of site-specific BATs.
- While impingement and entrainment occur at the intake screens, mitigation measures may be employed at locations other than at the intake screens as long as the mitigation measures result in compliance with 316(b) requirements.

DEC has removed the installation and maintenance of fyke nets requirement in Permit Section 2.1 and has modified Permit Section 2.1 and Fact Sheet Section 9.1 as indicated above.

5 Low Volume Wastewater

Comment Summary

Fact Sheet Appendix B, Table B.2.1 and Section B.3.4

- GVEA requested an explanation for where the low volume wastewater flow approximation came from as it differs from a December 2016 email from Heather Simon (SLR Consulting).

Response:

- GVEA included the following low-volume wastewater descriptions with their discharge application dated February 1, 2016:

  Unit 1 wastewater: The average discharge is estimated to be approximately 5 gallons per minute (gpm).

  Unit 2 boiler blowdown: The maximum continuous boiler blowdown flow rate is calculated to be 3.5 percent of the steam generation flow rate, approximately 40 gpm.

  Unit 2 reverse osmosis (RO): The average RO reject discharge from the RO subsystem is approximately 20 gpm, with maximum potential flows of 40 gpm.

  Unit 2 demineralization (ion exchange) regenerate: The average discharge of neutralized demineralizer regenerate is approximately 1 gpm.

  Unit 2 preservice rinse water: The water is an intermittent discharge and is estimated to be less than 1 gpm.

  Unit 2 floor and equipment drains: The average discharge from the Unit 2 plant drains is approximately 10 gpm.

  Overflow from Unit 2 slag/bottom ash quenching and conveying system: The overflow water is an intermittent discharge, and the average discharge is estimated to be 7 gpm.

  Fire protection: The fire protection water is an intermittent discharge and the average discharge is calculated as less than 0.2 gpm.

- DEC added the above wastestreams, using when provided, the maximum reported potential flows to arrive at an approximate low volume wastewater flow of 104. 2 gpm or 150,018 gpd.

On December 21, 2017, SLR Consulting suggested to DEC in a follow up email to GVEA's comments on the preliminary draft permit that DEC adjust the low volume wastewater flow limit by 25% more than the February 2016 maximum monthly average flow so that the flow limit would reflect full operations. (The maximum monthly flow in February 2016 was 0.40 mgd. A 25% increase to 0.40 mgd results in an average monthly limit of 0.050 mgd.) SLR also questioned the need for low-volume wastewater flow limits.

DEC concurred that low-volume wastewater flow limits were not necessary and removed them from subsequent versions of the Permit; however, mass-based calculations require the use of maximum daily and average flows. After further consideration, DEC determined that the design flow capacity of the dirty wastewater pump would best represent the maximum daily low-volume wastewater flow (0.202 mgd) and that the total low-volume wastewater flow as described in GVEA's application (see above description), would provide the best overall supported approximation for the average monthly flow. Because the Healy Power Plant has not yet operated at 100% year-round production, the average monthly flow of 0.050 mgd, proposed by SLR, while suggested to be representative of full production, may not be adequate enough to

account for periodic higher flows that affect the average monthly mass-based results. Until more data is available, DEC has determined to apply a larger error of margin for the average monthly flow. Therefore, DEC did not apply SLR's suggestion in the Draft Permit. Instead, DEC applied the low volume wastewater flow quantities as provided by GVEA in their application (0.150 mgd) to the average monthly mass-based calculations.

- Note that while flow affects the mass-based limits, the Draft Permit does not contain low volume waste source flow limits. Instead, the Draft Permit requires the reporting of the average monthly and maximum daily flows.

DEC did not make any changes to the permit or fact sheet based on this comment.

6 Significant Figures

Comment Summary

Appendix B, Page 6, Table B-3

- GVEA requests that the figures in Appendix B, Page 6, Table B-3 be rounded to an appropriate number of significant figures.

Response:

- 40 CFR 423.15 contains an oil and grease average monthly limit of 15.0 mg/L and a maximum daily limit of 20.0 mg/L. The oil and grease average monthly limit from the prior permit is 10.0 mg/L. 18 AAC 83.480 requires that permit effluent limitations be as stringent as in the previously issued permit. Therefore, DEC applied 10.0 mg/L as the oil and grease average monthly limit.
- 40 CFR 423.15 contains a total suspended solids average monthly limit of 30.0 mg/L and a maximum daily limit of 100.0 mg/L.
- As the above concentrations are found in regulation at 40 CFR 423.15, or, as in the case of the oil and grease average monthly limit, which is retained as it had been in the previous permit, DEC is maintaining these figures in Table B-3 as presented, although text has been revised in B.3.4 to reflect the correct degree of accuracy (15.0 mg/L and 10.0 mg/L) for the oil and grease average monthly limit.
- The mass-based limits are calculated by multiplying the concentration limit times the flow in million gallons per day times the pounds per gallon conversion factor. DEC performed these mass-based calculations for oil and grease and total suspended solids and applied the correct number of significant figures using mathematically accepted significant figure conventions.

DEC did not make any changes to Appendix B, Page 6, Table B-3 or the permit based on this comment. DEC made changes to the text in Appendix B at B.3.4 as indicated above.

7 Primary Outfall Label Correction

Comment Summary

Fact Sheet Section 2.0

- GVEA requested a correction to the labeling of the primary outfall from Outfall 001 to Outfall 002.

Response:

DEC corrected the labeling of the primary outfall in the Fact Sheet at Section 2.0.